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10/676,058	10/01/2003	Kay Leong Lim	AMT00-002CB	7739

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EXAMINER

MCNELIS, KATHLEEN A

ART UNIT PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Claims Status

Claims 15-24 remain for examination wherein claims 15, 16, 19 and 22 are amended.

Terminal Disclaimer

The terminal disclaimer filed on 01/19/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent numbers 6,461,563 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Status of Previous Rejections

The following rejections are withdrawn:

- Claims 15-17 under the judicially created doctrine of obviousness-type double patenting is withdrawn in view of the terminal disclaimer.
- Claims 15-24 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of amendments to the claims.

The following rejections are maintained:

- Claims 15-24 under 35 U.S.C. 102(b) as being anticipated by Wentorf, Jr. et al.
- Claims 15-24 under 35 U.S.C. 102(b) as being anticipated by Engelfriet et al.
- Claims 15- 17 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese patent JP 62-30804 (JP '804)¹ or Hahn (U.S. Pat. No. 3,605,123) or Wheeler et al. (U.S. Pat. No. 3,852,045).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

¹ Based on September 2006 translation to English

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Claims 15-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Examiner does not find support for the limitation "...there being no intervening material between..." the first and second parts.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 15-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wentorf, Jr. et al. (U.S. Pat. No. 3,831,428).

Wentorf Jr. et al. is applied as set forth in the 10/16/2006 Office action.

Regarding the amended limitations to claims 15, 16, 19 and 22, Wentorf Jr. et al. discloses sintering during compression (col. 5 lines 1-15) and provides an example where this method is used to bond a diamond or CBN insert to a Co-WC powder jacket (col. 5 line 27- col. 6 line 10). These structures are therefore bonded with no intervening materials in between and are in contact during sintering; therefore the bond would have the adhesive strength that is attainable through being in contact during a sintering process.

Further, the limitation that the adhesive strength is that of materials that are in contact during a sintering process implies no specific bond strength. Materials such as compacts in a

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sintering furnace may be in contact with the furnace conveyor belt or hearth plate during sintering but not be bonded to these surfaces. Conversely, compacted powdered materials may be strongly bonded by liquid-phase sintering.

Claims 15-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Engelfriet et al. (U.S. Pat. No. 4,392,397).

Engelfriet et al. is applied as set forth in the 10/16/2006 Office action.

Regarding the amended limitations to claims 15, 16, 19 and 22, Engelfriet et al. discloses an embodiment with AISI 430 housing encircling a polycrystalline diamond core where the materials are fitted by pressing (col. 4 lines 19-54), therefore there is no intervening material between the first and second parts.

The amended limitation that the adhesive strength is that of materials that are in contact during a sintering process implies no specific bond strength. Materials such as compacts in a sintering furnace may be in contact with the furnace conveyor belt or hearth plate during sintering without being bonded to these surfaces. Conversely, compacted powdered materials may be strongly bonded by liquid-phase sintering.

Claims 15- 17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese patent JP 62-30804 (JP '804) or Hahn (U.S. Pat. No. 3,605,123) or Wheeler et al. (U.S. Pat. No. 3,852,045).

Regarding the amended limitations to claims 15, 16, 19 and 22, JP '804 discloses an example (Application Example 1) where a layer of iron powder is contacted with a layer of a cement alloy and pressed (p. 7 of translation) where the iron powder represents a first part and the cement alloy a second part; therefore there is no intervening material between the first and second parts. The powders are then heated to produce a diffusing liquid phase while maintaining pressure

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(p. 8 of translation), therefore the bonded strength is that attainable through being in contact during sintering.

Hahn discloses a method of coating a dense base metal (i.e. a first part) with a thin porous film (i.e. a second part) by plasma spray (col. 2 lines 60-72), therefore there is no intervening material between the first and second parts. Since the coating material is applied by plasma flame process, the bonded strength is that attainable through being in contact during sintering.

Wheeler discloses an embodiment wherein a void metal composite (VMC) material is bonded to a solid core (Figs. 10 and 11) by positioning the core material before compaction of the VMC structure (col. 13 line 45 – col. 14 line 51), therefore there is no intervening material between the first and second parts. The assembly is bonded by sintering (col. 14 lines 51-65), therefore the adhesive strength is that attainable through being in contact during a sintering process.

Alternatively, the amended limitation that the adhesive strength is that of materials that are in contact during a sintering process implies no specific bond strength. Materials such as compacts in a sintering furnace may be in contact with the furnace conveyor belt or hearth plate during sintering without being bonded to these surfaces. Conversely, compacted powdered materials may be strongly bonded by liquid-phase sintering.

Response to Arguments

Applicant's arguments filed 01/19/2007 have been fully considered but they are not persuasive.

Arguments are summarized as follows:

1. Claims have been amended to limit the bonding strength to that which can be attained as a result of sintering parts that are in contact with one another.

2. JP '804 teaches heating to a temperature higher than the sintering temperature of the system that is being processed and further requires that at least one material of that system be caused to melt.
3. Wentorf discloses a layer of cement between the various parts that make up the claimed structure.
4. Engelfreit's structure is formed by press fitting, therefore a film of air will be between the various parts making up the claimed structure.

Examiner's responses are as follows:

1. Examiner's position is that the amended limitation implies no specific bond strength. Materials such as compacts in a sintering furnace may be in contact with the furnace conveyor belt or hearth plate during sintering without being bonded to these surfaces. Conversely, compacted powdered materials may be strongly bonded by liquid-phase sintering.
2. See examiner's position above regarding the bond strength limitation.
3. In Wentorf, one of the structures is made from a WO-Co cement, as discussed above regarding the rejection grounds.
4. Engelfreit discloses pressing and heating (col. 5 lines 40-49). Further, the instant claims do not limit the porosity (voids where air would be expected) at the interface.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM
03/16/2007

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